

NOTES BY THE EDITOR.

RECORDS OF FOGGY AND CLOUDY DAYS.

Dr. A. C. Simonton, voluntary observer of the Weather Bureau at San Jose, Cal., calls attention to the fact that the blanks for weather reports from voluntary stations have no provision for reporting fog. This is an omission which he thinks ought not to exist. He says that it is just as important to report fogs as cloudiness; while fog lasts there is no sunshine, and yet we can not say that it is clear nor can we say that it is cloudy. Shall we report a foggy day as a clear day? At many points, especially near the ocean, there is much fog, and in climatological records this surely ought to be reported; it is certainly important for those studying the climate of distant regions to know whether there is more or less fog.

The compilers of the new edition of "Instructions" in their efforts to give the voluntary observers as little trouble as possible, have—not only in respect to fog, but in other matters—reduced the instructions and suggestions to the fewest possible words, and have omitted some subjects that, in special cases, may become important. The large majority of our observers never see the true ocean fog, but those who do experience it certainly have the privilege of substituting the word "foggy" for "cloudy," in describing the character of the day, on Form No. 1009.

These instructions were intended mostly for observers in agricultural districts, and it will often happen that observers in cities, or at sea, or on high mountains, or those in extreme northern and southern latitudes, will perceive that they must—in order to do good work—depart from the literal wording of this pamphlet. As is stated on the first page, "To render the meteorological observations taken throughout the United States of the greatest value and to facilitate their use in investigating questions relating to weather, it is important that a uniform system of taking and recording observations be adopted." It is evidently of the greatest importance that observations be taken on a uniform system at each station for many years, in order to obtain satisfactory normals, and the publication of the "Instructions of 1897" is not intended to disturb the uniform methods that many of our observers have maintained for so long a time.

HOMOGENEITY AND UNIFORMITY.

As uniformity at many stations over a large area is quite as important as uniformity at one station for many years, therefore, it would be eminently proper for those who have maintained such long records to consider whether—while still keeping up their integrity—they can not also do something additional that will make it possible to compare their own observations with those of distant stations without introducing discrepancies due to methods and instruments.

The most important sources of discrepancy may be enumerated as follows:

Temperature.—(A). A difference of a few feet in the height of thermometers above ground causes an apparent difference in the extreme temperatures at any two stations. (B). A difference in the style of exposure of a thermometer, one being hung on the north side of a house, too close to the wall; another swinging freely in the shade of a tree; a third put within a shelter of double lattice-work, where the wind has not the freest access; all these exposures will necessarily produce differences in recorded temperatures. (C). Unless thermometers are purchased of the best makers—and such

are rather expensive—they are very apt to differ among themselves one or more degrees, F., even when stirred about together in a basin of water; the differences due to inclosures and instruments should be applied to the records before any study of climate is contemplated. (D). The differences in the immediate surroundings of two stations due to their being on hills or plains, in valleys or in the shadow of a mountain, or in a forest, will produce local peculiarities that are characteristic of very limited areas, and that must be duly considered in studying the peculiarities of climatic records; this question of special local climates, even in the narrowest possible sense of the word local, interests the botanist and agriculturist, because slight differences become appreciable in the growth of the plant.

Precipitation.—The records of rainfall show even wider variations, both absolutely and relatively, than do the records of temperature. The differences in temperature between two neighboring thermometers are paralleled by the differences in the catch of two local rain gauges. On the average of many years it is found that a rain gauge about a hundred feet above the ground will only catch 65 per cent of the rainfall caught by one at the ground, and it has been shown that this is simply due to the more active and violent action of the wind at the mouth of the upper gauge, since as soon as a gauge is shielded from the wind its record becomes the same whether it is one foot or a hundred feet above ground. For the same reason, gauges at or near the ground catch less in proportion as they are located in windy or sheltered spots; thus, in a set of fourteen gauges observed by Dr. Hellmann, near Berlin, in a region over which the average rainfall for the year must have been practically identical, some showed deviations of 14 per cent, which at first seemed to be due to the influence of forests, but were soon found to be simply the irregularities of the deficiencies in the catch of the rain gauge, being in fact in the nature of an error in the catch, due to the strength of the wind at the mouth of the gauge.

These paragraphs suffice to illustrate the extreme importance and difficulty of obtaining true temperatures and true rainfalls and the necessity of bearing in mind the uncertainties of our methods of observation and the incongruity of our data when we attempt to study minute peculiarities of climate.

It is hardly to be expected that the majority of the voluntary observers would care to devote that labor and thought to the subject which specialists in hygiene and climatology delight in, therefore the Weather Bureau avoids every appearance of imposing upon the voluntary observer, strictly so-called, the labor that many "special observers" willingly undergo for the sake of advancing the inquiries in which they are personally interested. It must, however, be recognized that every voluntary observer has, by the very fact that he voluntarily keeps a record, shown that he has some special interest in some part, if not the whole, of climatology. Therefore, to each one we may say: keep your record so that it shall be satisfactory to yourself in regard to the particular questions in which you are personally interested.

ELECTRICAL DISTRICTS.

Within the past few months several correspondents of the Weather Bureau have called attention to the fact that there exist here and there small and well-defined localities that are peculiarly subject to severe lightning strokes, and some explanation of this phenomenon has been requested. As